California Action Plan - Red Imported Fire Ant
Executive Summary

The attached plan provides the elements of a community-based Red Imported Fire Ant (RIFA) eradication/control program. This plan is unique in that it relies on community cooperation to an unprecedented degree. Many areas—residences, parks, schoolyards, commercial properties and public right-of-ways—will be affected by red imported fire ant. Local entities that are responsible for these areas will want to ensure that their special needs are met. Therefore, this plan proposes a cooperative program in which treatment activities will be undertaken by local agencies, with the California Department of Food and Agriculture (CDFA) providing assistance, coordination, and technical support. CDFA will continue in its role of enforcing plant quarantines to control the spread of the pest on possibly infested articles, taking prompt action on isolated infestations found outside the current eradication area, public outreach and education, statewide detection and scientific support.

In a companion document, CDFA outlines an interim program to train local entities to begin treatment in core areas. In the attached plan, CDFA presents a basic program for all local activities listed below and for a statewide fire ant detection and exclusion program. CDFA recognizes that counties will incur additional costs to continue and expand local treatments. CDFA is committed to working with counties to identify those costs that will be necessary to develop long term funding sources.

The principal elements described in this plan are:

Local Activities and Assistance

Public Outreach	*Information and training will be provided to help communities organize an optimal fire ant program.*
Program Management	*The state will provide local coordination of multi-city treatment, outreach, and monitoring programs.*
Interior Quarantine	*Industries that present the highest risk for spreading fire ant will be monitored for compliance with fire ant quarantines.*
Environmental Monitoring	*Application of insecticides used in the treatment program will be monitored by state agencies.*
Local Treatment	*Treatment will begin in core areas.*

Statewide Activities

Exterior Quarantine	*Surveillance for fire ant will be strengthened at California's agricultural inspection stations.*
Statewide Survey	*State biologists will survey high risk sites to detect any new infestations of fire ant.*
Research	*Top priority research includes refining treatments for fire ant under California conditions.*

Red Imported Fire Ant

Table of Contents

California Action Plan
Red Imported Fire Ant
1999

CURRENT SITUATION AND ASSESSMENT:

The Red Imported Fire Ant (RIFA) is an aggressive, exotic insect that was introduced into the Southern United States in the late 1920's and has since spread to 11 southeastern states. In those states, the RIFA has had adverse impacts on human health, agriculture, the natural environment, and human activities.

The RIFA in California was discovered in October 1998, when a nursery in Nevada found RIFA in a shipment of nursery stock from a nursery in the Trabuco Canyon area of Orange County. Subsequent surveys of the nursery and the surrounding residential and retail commercial community revealed that the RIFA was generally infesting the entire Trabuco Canyon area. On December 1 and 2, the California Department of Food and Agriculture (CDFA) convened a Red Imported Fire Ant Science Advisory Panel (RIFASAP) in Orange County, to assess the current situation and provide recommendations on how to proceed. The recommendations of the panel are attached (Attachment I). Since the science advisory panel meeting, further surveys have found infestations of RIFA, at varying levels of infestation, in 26 localities in Orange County, the Cities of Cerritos and Hawaiian Gardens in Los Angeles County, and in eight locations in Riverside County (Attachment II and III). Proclamations of Eradication have been issued for 569 square miles of Orange County, 45 square miles of Los Angeles County, and 175 square miles of Riverside County.

Given the widespread nature of the infestation, the biology of the RIFA, the experience of other states, and the fact that RIFA has never been eradicated since being introduced into the United States, the CDFA assessment is that the possibility of eradication is low and will be very difficult to achieve. For example, in Lubbock, Texas the Department of Agriculture has been attempting to eradicate RIFA from a six block area for more than 10 years. Despite these efforts, this infestation persists. However, given the extremely adverse impact of the RIFA on endangered species and other aspects of the natural and human environment in the infested states, it is incumbent upon the CDFA to attempt to eradicate/control the pest through a community based, environmentally sensitive plan. This plan is intended to be a five year effort to achieve that goal.

The program will be reviewed annually by the RIFASAP and progress assessed. If, after five years the program has not made substantial progress, as measured by a reduction of finds of RIFA in the currently infested area, the problem will be reassessed with the intent of establishing a management program. The overall goal of this plan is to provide an intensive, coordinated, state and community-wide program that will provide a high probability of containing the spread, controlling and/or eradicating the current population, and providing mechanisms to detect and deal with the RIFA in California. If the program fails to eradicate the RIFA, this plan would establish an infrastructure to control RIFA in California for the future.

In formulating this plan, the CDFA has met with and solicited input from other state agencies (Attachment IV), the Audubon Society, the Nature Conservancy, the Sierra Club, agricultural interests, local officials in Orange County, the University of California, the Texas Department of Agriculture, the Texas Agricultural Extension Service, and the RIFASAP.

OBJECTIVE:

To implement a multi-year, intergovernmental, coordinated state and community-wide plan that will contain the spread, control and/or eradicate the current population, and provide an infrastructure to detect and eradicate/control the RIFA in California.

ELEMENTS:

Lead Agency

The CDFA would be the lead agency and would maintain the RIFASAP to provide biological program review. CDFA will work in cooperation with local officials and other interested parties in implementing this plan. The program will require funding for multiple years.

Intergovernmental Coordination

State and Federal Level: The CDFA will provide the lead in working with other governmental agencies to formulate plans for those agencies to deal with the RIFA in their jurisdictions. Each agency, such as State Parks and Recreation, would assume responsibility for RIFA eradication/control on lands for which they have responsibility. In that manner, each plan would take into consideration the unique environmental, biological, and philosophical considerations that exist within that agency.

Local Government Level: The CDFA will work with the city and county government entities to formulate plans for dealing with RIFA. Each individual city and/or county entity would be responsible, working with the CDFA, for soliciting public input, formulating a long term plan, obtaining funding, and implementing the desired program in the parks, planting strips, traffic dividers, etc. within their jurisdictions. Each local government will develop a plan that is tailored to meet the needs and concerns of their community.

Environmental Impact

The CDFA would prepare any necessary environmental impact documents with input from interested/affected stakeholders.

Public Outreach and Education

The CDFA will act as the lead agency and will coordinate all aspects of the program with the public, the affected industries, and state and local government entities. The Department will develop technical information and provide technical support and training, develop and disseminate literature, and act as a clearinghouse for information to the public and press.

Statewide Detection and Quarantine

The CDFA will assume responsibility for planning, organizing, and implementing a comprehensive statewide RIFA detection and exclusion system. Without an effective exclusion and detection system in place, RIFA will continue to be introduced into and become established in the State. The overall objective of the program will be to monitor

high risk sites and pathways and detect incipient infestations. Where the RIFA is found to be a small, isolated infestation in urban or rural areas and/or a new introduction, the CDFA will assess each site and make a determination regarding the feasibility of eradication. If eradication is possible, the CDFA and the county agricultural commissioner will conduct the eradication program. CDFA will continue to work closely with the nursery industry to eliminate RIFA from the nursery trade.

RESEARCH:

A research component will be included in this plan to assess the behavior of the RIFA under California conditions, to find better methods of surveying, and to develop new technologies for combating this pest.

California Department of Food and Agriculture

PUBLIC OUTREACH
Red Imported Fire Ant in California

Experience dictates the best option for eradication/control of fire ants is public education and long-term eradication/control of this pest on a community-wide basis. The goal of this plan is to make information and expertise available to help communities, groups, and individuals organize fire ant management and to distribute educational materials to those living in infested areas, to minimize the risks of stinging incidents and health threats. The California Department of Food and Agriculture (CDFA) will coordinate dissemination of information, training programs, and identify local treatment options. This effort requires a coordinated and consistent long-term delivery plan.

Educating each of the stakeholders should result in less-intensive control measures, once the fire ant populations are reduced. The education program will instruct all local stakeholders to find, identify, treat, follow, and develop long-term eradication/control programs. This program element is designed to increase and maintain awareness of the procedures each need to observe in order to live with a new threat in a neighborhood environment that may be present for years to come. A specific protocol for each stakeholder category is developed with clear specific objectives and specific timelines. This is a long-term effort requiring a five-year public outreach implementation and maintenance program.

Community and Government Leaders

The CDFA will initially provide briefings and status updates for all government managers in affected cities and counties. Seminars will be scheduled for local government workers charged with coordinating, planning, and implementing eradication/control strategies. Treatment options will be identified and specific training will be provided for implementation of each of those options.

Written protocol materials, brochures, and general public outreach information will be provided to each local government in identified infested communities. Specific briefing overviews and suggestions will be scheduled with city and county government management, including city councils and county boards of supervisors. Hands-on seminars will be scheduled for training city-county workers regarding treatment methods available, as well as correct identification and tracking procedures.

Local governments may want to coordinate efforts with county agricultural commissioners, local Vector Control agencies, University extension service specialists, or, with enough citizen support, establish fire ant eradication/control programs to treat public areas and perhaps allow homeowners to have their properties treated for an additional fee. The municipal or county government could also opt to contract with commercial pest control applicator(s).

Homeowners

Homeowners, under the CDFA public outreach plan, will be provided brochures containing information about the pest and will be encouraged to participate in organizing neighborhood cooperative treatment plans. Educational materials providing suggestions on avoiding stinging incidents, pesticidal and non-pesticidal treatment protocols, proper application, and follow-up

methods will be outlined. Local governments would serve as contact points for homeowners seeking more information. CDFA will mass mail, to each home in infested areas, basic information about the problem. Additional information will be provided to local governments for inclusion in routine mailings of water or utility billings, local event mailings, and park and recreation informational communications. CDFA will meet with homeowner associations as requested to help identify the need for a plan and provide informational and educational materials to distribute to members.

Schools

CDFA will provide school districts and teacher resource centers in each of the affected areas with specific classroom information about the RIFA problem in the form of brochures, biological data, and public safety elements. This effort will focus on teaching children, kindergarten through high school about the pest, the risks of contact with the pests, how to avoid contact with these pests, what to do if attacked by the pests, and possible health threats. Speakers will be available on a limited basis for school appearances. It is recommended that programs on the pest be limited to infested areas and larger assemblies in schools located in those areas initially rather than individual classroom projects.

Ethnic Community Outreach

Ethnic communities, and languages used in those communities, will be identified in RIFA infested areas. Where possible, materials will be translated into those specific languages. An advisory group will be created for each ethnic community identified to advise on distribution and understanding. Spokespersons having the ability to appear on ethnic radio and television outlets for discussion programs and news inserts will be recruited.

Public Health

A public health advisory group will be organized to specifically address public health risk issues and advise on outreach required as the project proceeds based on problem areas that are identified. This group should involve representatives of the medical community and public health agencies.

Pest Control Companies

CDFA will contact pest control companies and provide basic information on acceptable options for eradication/control of fire ant populations in infested areas. In addition, CDFA will develop an outline for an action plan that can be provided to firms interested in working with local government for treatment and aid local government in coordinating the effort with homeowners and interested pest control firms.

Trades-Landscapers-Lawn Maintenance-Commercial Construction and Residential Builders

Seminars will be scheduled specifically for this segment with protocol and coordination plans presented identifying the scope of the problem, the short-term and long-term solutions, and specific information on action required by each of these trade entities.

Community Organizations

Gardening clubs, service organizations, and community libraries will be contacted and offered

informational brochures about the fire ant biology, risks posed by the fire ant to the community, and a general description of treatment options. CDFA will provide speakers for these groups when feasible. Educational materials will be shipped to requesting organizations for dissemination to their members.

Public Access

Web Site

Information about RIFA is already available on the CDFA web site. This service should be expanded to provide specific information on each element of the problem including biology, public health, identification and location of colonies, and specific treatment options. A separate web site should be developed specifically for RIFA that will focus on the specific communities in which infestations have occurred. The locations for this information will be included on all written and educational materials distributed and provided to the media.

Consumer Hot Line

A specific telephone hot line service is already implemented in the immediate Los Angeles/Orange County area and additional information is available on the Statewide CDFA consumer hot line. Widespread promotion of these services needs to be expanded and included with all outreach educational materials and contact with the media.

Newsletter

A monthly update to include the latest summary of infestation areas, reminders regarding surveying and reporting ant finds, public safety issues, and treatment plan options to be distributed to community libraries, government offices, schools, pest control operators, and can be included in mass mailings by communities to residents.

Public Events, Community Fairs and Festivals, and Educational Forums

Developing exhibits and displays to provide educational information focusing on the fire ant problem.

Media

- Produce regular news releases.
- Maintain contact with news departments and reporters.
- Provide feature story material.
- Editorial board briefing sessions in major Southern California newspapers.
- Coordinate treatment features and stories.
- Respond to requests for photos and photo opportunities.
- Participate in radio and television discussion programs.
- Place public service announcements using radio, television, and print where possible.
- Produce video features for cable TV, public TV, and classroom uses.
- Promote accessibility locations for information on proper treatment and handling options for lawns, gardens, homes, buildings, pavement cracks, mulched flower beds, etc.

- Develop specific features for special, local publications targeting landscapers, gardeners, homeowner group newsletters etc.

Fact Sheets
Develop specific fact sheets for distribution by extension service offices and county agricultural commissioners targeting specific elements of the campaign.

Examples:
- "Red imported fire ants in vegetable gardens"
- "Red imported fire ants in wildlife areas"
- "Red imported fire ants invading homes"
- "Red imported fire ants and lawns"

Posters
Design posters for specifically targeted uses. Posters distributed and displayed at schools, nurseries, community buildings, etc.

Effectiveness Measurement

Number of eradication/control projects will be identified and monitored on an ongoing basis. Each element of the public outreach program will be inventoried for numbers produced, numbers of people contacted, numbers of inquiries, and individual project success or failure rates.

Partnerships

Partnerships will be identified and developed with public agencies, private industry, extension service, educational and agricultural organizations with an eye toward cooperative cost-cutting projects. Sharing brochure cost and development, posters, newsletters, etc. will be reviewed for maximum efficiency in delivering each of our messages for RIFA program.

PROJECT	TIMELINE IMPLEMENTATION
Government Leader Training	April
Local Government Protocol	May
Homeowners/Associations	June
Schools	May/September
Ethnic Communities	June/July
Public Health Advisory	May
Pest Control Companies	April/May
Landscape Trade Seminars	July
Web Site Expansion	Implemented
Independent Web Site	September
Telephone Hot Line	Implemented
Newsletter	May/June
Fair Displays	Implemented
Media	Implemented
Fact Sheets	June/July
Partnerships	April/May
Measurement Review	June 2000

Red Imported Fire Ant
Treatment and Local Survey Protocol

TREATMENT PROTOCOL

Red Imported Fire Ant (RIFA) chemical treatment activities are necessary for the eradication/control of this pest. There are no biological control agents currently available that have the efficacy necessary to achieve control or eradication. This treatment protocol has been developed for use by the California Department of Food and Agriculture (CDFA) along with other participating state and federal agencies, agricultural commissioners, other county agencies, and municipalities.

The CDFA does not expect that there will be significant environmental or health effects, as a result of applications of baits used against the RIFA. The pesticides proposed for use are baits and are very specific to the target insects. The amount of active ingredients are typically less than one percent. Additionally, the Department of Pesticide Regulation (DPR) has provided an interim evaluation of the materials which are proposed for use, and found that when used according to label instructions, there will be no significant risk to people or the environment. In the review, the DPR found that these chemicals are not mobile in soil, not persistent in the environment, and therefore unlikely to move to water bodies.

Treatment occurs when a sample of *Solenopsis invicta* (Red Imported Fire Ant) has been confirmed by a reputable diagnostics group, such as the Plant Pest Diagnostics Branch of CDFA, or qualified personnel from county agricultural commissioners' offices.

An exact identification of the detection site is necessary. This can be a street address, landmark, or site determined by G.P.S. (Global Positioning System).

For optimal results, all mounds within the treatment area must be treated. Prior to initiating treatments, a thorough survey of the area must be conducted and detection sites recorded as noted above. Factors affecting determination of the treatment area size include the following: disposition of find site (private property, nursery, business park, etc.), method and history of introduction (if known), proximity of site to natural barriers such as dry areas, water bodies, etc., and man-made barriers.

Granular bait treatments using a metabolic inhibitor or Insect Growth Regulator (IGR) are the treatment methods of choice for RIFA. These materials can be distributed by broadcast over entire areas or small applications can be made to individual mounds. Broadcast spreaders range from small hand-held units to larger hopper units. If reproductive adults are found, a soil drench of mixed pesticide may be applied to the colony to quickly kill the reproductives and prevent local spread.

In most areas of Central and Southern California, both a metabolic inhibitor, such as Amdro (hydramethylnon), and an IGR, such as Distance (pyriproxyfen) will be used to treat RIFA colonies. If the metabolic inhibitor is used first, the IGR application will follow at least six weeks later. If the IGR is used first, the metabolic inhibitor will follow within one to two weeks. The local conditions will dictate which material is used first. Treatment should be initiated only when soil temperature is between 65 and 90 degrees, and the treatment area is free of rain or irrigation for a minimum

of 36 hours. RIFA acceptance of bait materials should be tested by placing a small amount of bait near a known colony where activity has been recently observed. If the material is readily retrieved by foraging RIFA, then treatment should occur on that day.

An efficacy survey of the treated area should be performed no sooner than six weeks after the IGR application. Survey should include both visual and baiting techniques. Baiting procedures are described in following paragraphs.

The following precautions will be taken during any treatment program:

- All pesticides are used according to registration and label directions.
- Obtain all necessary permits.
- All employees working with pesticides receive safety training, use appropriate safety equipment, and are under medical surveillance.

NON-PESTICIDE TREATMENT OPTIONS

Homeowners and other local entities may choose a non-pesticidal option of hot water. Known RIFA mounds can be treated using scalding hot water. The success rate of complete eradication/control using a single hot water treatment is about 60 percent. Each mound should receive at least two gallons of hot water. The water needs to reach all parts of the colony, especially the queen and brood chambers. A single treatment may not be successful; daily treatments over five to 10 days may be necessary. Caution must be exercised, as the applicator could be injured, as well as surrounding plants. If neighboring areas have RIFA, re-infestation will occur.

ERADICATION/CONTROL PROGRAM SURVEY PROTOCOL

Pre-Treatment Survey Protocol

A pre-treatment survey can consist of visual and baiting techniques. A minimal survey would be to look at areas that have water on a consistent basis, such as around the base of trees, next to water bodies (the interface between a swimming pool concrete area and turf, for example), and looking for evidence of soil up-welling or mound building. RIFA mounds are usually found in open, sunny areas such as lawns, pastures, or fields. New RIFA colonies do not make a conspicuous mound for several months. Up-welling can be seen before a mound is established. The soil brought to the surface is of a fine texture, not coarse as is the case with gopher mounds (although RIFA can establish a colony in a gopher mound). On a warm, sunny day, ant foraging activity can be observed, and the foraging trail can be traced back to the colony. Urban areas, green belts, parks, golf courses, and other areas that have a year around water source are likely areas for establishment of RIFA.

A more intensive survey would include placing baits to attract foragers, retrieving them at an interval from one hour to overnight. The most effective bait used for California detection efforts, to date, has been a well known canned luncheon meat product cut in small portions (approximately one half to one inch square), and placed in an area to be surveyed at

intervals of 50 feet or less. The baits can be placed in small, perforated plastic containers and secured by a wire inserted through the container and into the soil. If the survey is large, small flags can be used to mark the bait locations. Baiting activities are not effective if soil temperature is below approximately 65 degrees, or if standing water is present. If conditions are ideal such as a dry, clear, calm day of 70 to 75 degrees, baits can be retrieved in one to two hours. Less ideal conditions may require the baits to remain overnight. In very warm weather, RIFA workers forage in the evening and night. Do not place baits where small children may be active. Baits can also be lost to foragers, such as dogs, coyotes, crows, etc.

If the area treated has been adequately surveyed before treatment, most colonies will have been identified, and follow-up survey can consist of a visual survey for colony activity. This can occur the following day after treatment with hot water, or at six weeks when a pesticide containing metabolic or growth regulators is used. Follow-up survey should be done in the above mentioned conditions regarding temperature, wind speed, and moisture. To be reasonably sure the area is free of RIFA, surveys should be performed in the spring, summer, and fall for two years following treatment. Bait surveys should be conducted for a higher level of confidence.

MONITORING PROTOCOL ON TREATED RIFA COLONIES

The goal of a monitoring program for RIFA is to determine whether or not the treated colonies are dying. Accordingly, the following protocol is established:

Visual Survey Protocol

Identify up to 50 colonies per treated area (Trabuco Canyon, Cypress, etc.) and follow the colonies for six to eight weeks after treatment. Within a predetermined time frame, morning or afternoon, and within similar daytime temperatures, visually determine worker numbers for three to five minutes and compare to previous such counts to determine if worker numbers are declining. The length of time to follow the colonies after treatment is dependent upon the time of the year and will be shorter in the summer and longer in the winter. If the colonies have not died out, follow pesticide label instructions regarding retreatment schedules for the expected results. When workers are no longer found, proceed with baiting survey.

Baiting Survey Protocol

The baiting shall be done when air temperatures are between 70 and 90 degrees Fahrenheit. Baits are placed for only two to three hours and then retrieved, noting the presence or absence of RIFA. In orchards, bait every other tree in every other row. In golf courses, parks, median strips, etc., bait at the south base of trees and other sites where colonies were found in the past. The precise density of baits will be dependent on the area to be baited, but one bait every 50 to 100 feet may be a useful density. In urban areas use one bait per property, if appropriate, and place the baits where colonies were found in the past such as bases of trees, in raised flower beds, etc. If RIFA are found, re-treat and repeat monitoring protocol. If no RIFA are found, return and repeat the baiting protocol the next year.

This protocol does not contain an exact bait density but relies on the detection staff to exercise their judgement in each situation.

AREAS OF RESPONSIBILITY

Treatment activities for RIFA will be a cooperative effort between city, county, state, and federal agencies. All groups and agencies will report all treatment activities to the Pest Detection/Emergency Projects Branch of Plant Health and Pest Prevention Services, California Department of Food and Agriculture. This report should include agency name, date of treatment, treatment number (first, second, third, etc.), name and amount of pesticide used, size of area treated, address, city, and county.

The CDFA will serve in an advisory capacity. This will include the coordination of research activities done by in-state groups such as the University of California, and out-of-state experts such as members of the scientific advisory panel for RIFA. Research findings and the most current treatment information will be available to participating agencies and property owners. Starting April 1, 1999, CDFA will also provide training to participating state, county, and city agencies involved in survey and treatment activities.

Red Imported Fire Ant
Quarantine Project and Regulations

Proposed Quarantine Regulatory Program

Exterior Quarantine Element

The proposed plan for a long-term Red Imported Fire Ant (RIFA) program at the southern border stations involve increasing inspections of commercial trucks coming from RIFA-infested areas in the following manner:

- At the Blythe, Vidal, and Yermo inspection stations, add an additional inspector to each work shift to conduct intensified inspections of vehicles with a high probability of transporting RIFA. Since these border stations are open 24 hours a day, year round, an additional five inspectors will be needed to provide the coverage for this activity.

- At the Laughlin/Highway 95 Junction, vehicles can enter California without having to travel through a border station. In this case, vehicles bypass the Needles Inspection Station which is located on Highway 40. This bypass is a well-paved road which provides smugglers easy access into California. New operations would begin on this road with inspections scheduled to meet the peak traffic season. Five additional inspection staff would be needed to operate this station.

- At the Agnes Wilson Bridge, which is located between the Blythe and Vidal inspection stations, vehicles can enter California without having to go through either the Blythe or Vidal inspection stations. To close this pathway, new operations would be implemented with inspections conducted during the peak traffic season. Five additional inspection staff would be needed to operate this station.

- California Department of Food and Agriculture (CDFA) is investigating advanced technologies to provide rapid identification of pests in the field.

Interior Quarantine Element

Quarantine: The detection or interception of one or more ants will trigger baiting, intensive inspections and surveys to determine if an infestation is present. A nest, a queen, or other evidence of an infestation will result in a property being placed under hold and intensive inspection of the properties within one mile of the infested property. Multiple infested properties in a concise area will be quarantined along with a one mile buffer area around the positive properties. Properties under hold or in a quarantine area are regulated to prevent the movement of ants from the area. Movement of ants (especially queens or nests) is possible in any type of noncompacted soil product being moved. Consequently, developers, builders, landscape contractors, lawn maintenance workers, nurseries and homeowners within the quarantined area may be affected. Hay bales are also a regulated article due to their documented potential as sites for fire ant nests.

Negative site surveys for one year will trigger the lifting of a hold notice unless the site is within a RIFA quarantine boundary.

Red Imported Fire Ant (RIFA) Project Interior Quarantine Work Plan

The RIFA project will utilize professional staff and seasonal employees to complete the necessary quarantine activities, regulatory work, treatments and detection efforts. Permanent personnel will oversee all of these functions. The project activities are outlined below.

I. QUARANTINE

A. Quarantine Restrictions

I. Regulated commercial or noncommercial articles and commodities produced within the area under quarantine are prohibited movement from the area unless they can be certified as treated against RIFA in a manner approved by the Secretary or County Agricultural Commissioner, inspected and found RIFA-free, or were grown, produced, manufactured, stored or handled in a manner that prevented infestation by or destroys all life stages present of RIFA.

2. Regulated commercial articles and commodities produced outside, but moved into the area under quarantine, will be safeguarded against infestation while being stored, handled or maintained in the area, and may be removed from the area with documented evidence of that safeguarding.

3. Regulated articles and commodities transiting through the area under quarantine will be either covered/enclosed themselves, or in closed vehicles or containers, under permit conditions that preclude infestation or otherwise safeguarded against infestation.

4. A survey of high risk nurseries outside the current quarantined areas will be conducted during the spring/summer of 1999. High-risk nurseries are located in all parts of southern and coastal California.

5. Shipments of plant stock from RIFA-positive nurseries to other nurseries and landscapers will be traced and the stock and site(s) inspected.

B. Approved Quarantine Treatments

1. Nursery stock treatments: As per label directions, either chlorpyrifos, bifenthrin or diazinon insecticides shall be applied to the soil of all nursery stock moving out of the quarantine area.

2. Fenoxycarb insecticidal bait treatments will be used by nurseries under RIFA-free compliance, as a bait treatment for their growing sites.

C. Alternative Certification Procedures

1. In lieu of treatment, large lots of noncompacted soil, from commercial and/or real estate developments and construction projects, may be baited with canned luncheon meat to determine the presence of RIFA.

2. Incidental and miscellaneous regulated commercial and noncommercial commodities may be inspected and released if determined/found to be free of RIFA.
3. Nursery plant stock treatment/certification procedures not dependent on the use of organophosphates will be sought and developed, to minimize any potential impact on the state's environmental resources.

D. Quarantine Action

1. Within the area under quarantine regulation, all commercial growers and establishments that grow, produce, propagate, handle, store, maintain, ship, transport or process regulated articles and commodities will be notified of quarantine requirements and placed under compliance agreements which specify approved treatment and/or handling procedures to certify freedom from RIFA.

2. The activities, surveys and treatment records of growers and establishments under a RIFA compliance agreement will be monitored by RIFA Project officers to ascertain that all applicable survey and treatment procedures, protocols and information records are being properly followed and/or documented.

3. Treatments that are not witnessed directly by RIFA Project regulatory staff will be monitored by either: 1) on-site inspection of the regulated commodities, articles or conveyances for the presence of RIFA; or 2) pesticide residue analysis to ensure that correct soil-incorporation procedures are being followed.

In addition to the implementation of the preceding quarantine plan, there will be related activities conducted in parts of California outside of the quarantine area.

The RIFA infestation in Orange County poses a risk of introduction in other areas of California. The nurseries in the quarantine areas that are infested with RIFA have been shipping potentially infested nursery stock to other parts of California. These shipments will need to be traced and inspected to determine if RIFA has been introduced into any new areas. CDFA staff will cooperate with county commissioner staffs to conduct these inspections.

In addition to the potential spread of RIFA via nursery stock, there is significant soil movement for commercial development, construction or flood control. The soil has been transported out of the RIFA areas in some cases and the destination sites will need to be examined to determine if any new RIFA sites have been started.

Nursery Regulatory

Pesticide Runoff Mitigation

California Department of Food and Agriculture (CDFA) staff met with Department of Pesticide Regulations (DPR) staff to discuss DPR's concerns about runoff from quarantine treatments (nursery regulatory) of diazinon and chlorpyrifos for red imported fire ant (RIFA).

The Management Agency Agreement (MAA) between DPR and the State Water Resources Control Board was triggered when staff from the Santa Ana region sent a letter requesting a review of the fire ant quarantine treatments. The following action items were adopted:

- Nursery dealers who treat for RIFA are required to sign a compliance agreement. The agreement includes these statements:
    - All treatments will be applied according to label directions.
    - Runoff of the solution from the treatment area should not be permitted.
    - Excess solution (and used solution) must be disposed of in accordance with state and local regulations.
- DPR will provide training to CDFA regulatory staff about pesticide use, label requirements, and water quality concerns so CDFA staff can be on the alert for obvious pesticide use violations during their on-site visits to nurseries.
- CDFA will notify its regulatory staff to report possible violations to the county agricultural commissioner (CAC) or DPR's Pesticide Use Enforcement office in Orange County.
- DPR's district staff will provide pesticide use enforcement oversight on RIFA treatments in nurseries and will work with the local CACs to increase the number of inspections. Inspectors will review compliance with labels, worker and public protection, and water quality protection. Violators will be subject to DPR or county regulatory action.
- Information about water quality concerns and to minimize runoff will be provided in any mailers CDFA sends out to nurseries, other affected industries, or the general public. In addition, DPR will work through nursery industry associations, newsletters, and trade magazine publishers to educate the industry on water quality issues.
- DPR and CDFA are assessing whether reduced-risk treatment options are available for RIFA control for quarantine compliance.
- DPR will be notified of any future CDFA-sponsored training sessions. DPR and CDFA will assess if DPR participation in the training is appropriate.
- CDFA will be developing an industry web site containing technical information about appropriate RIFA treatments. DPR will add and review material, as appropriate.

Red Imported Fire Ant
Colonization Risk

From a temperature perspective, the only areas of California which are not at risk of Red Imported Fire Ant (RIFA) establishment, are areas where the ground freezes quickly in the winter. This probably includes only the snow covered regions of the Sierra Nevada and Cascade Mountains. All other areas would be at risk for RIFA colonization, assuming water is available. RIFA would spread more quickly in areas of warm summers and mild winters and less so in areas with cold winters, but would eventually expand into all areas, except as mentioned above.

HIGH RISK COUNTIES

- Counties considered to be at high risk for RIFA introduction and subsequent establishment because of a conducive climate, known avenues of RIFA introduction (e.g. containerized nursery stock) and large human populations and/or rapid population growth (resulting in an increased need for nursery stock) should include: Imperial, San Diego, Riverside, Orange, Los Angeles, Ventura, Santa Barbara, San Luis Obispo, and San Bernardino (lower elevations).

- Counties with warm summers and cool winters (not cold enough to eliminate infestations) and a known avenue of RIFA introduction (bee colonies transported into California for pollination of almonds) and/or rapid human population growth should include: Kern, Tulare, Kings, Fresno, Madera, Merced, Stanislaus, San Joaquin, Butte, Glenn, Colusa, Tehema, Sutter, Yolo, Yuba, Sacramento, Placer (Central Valley portion only), and Solano.

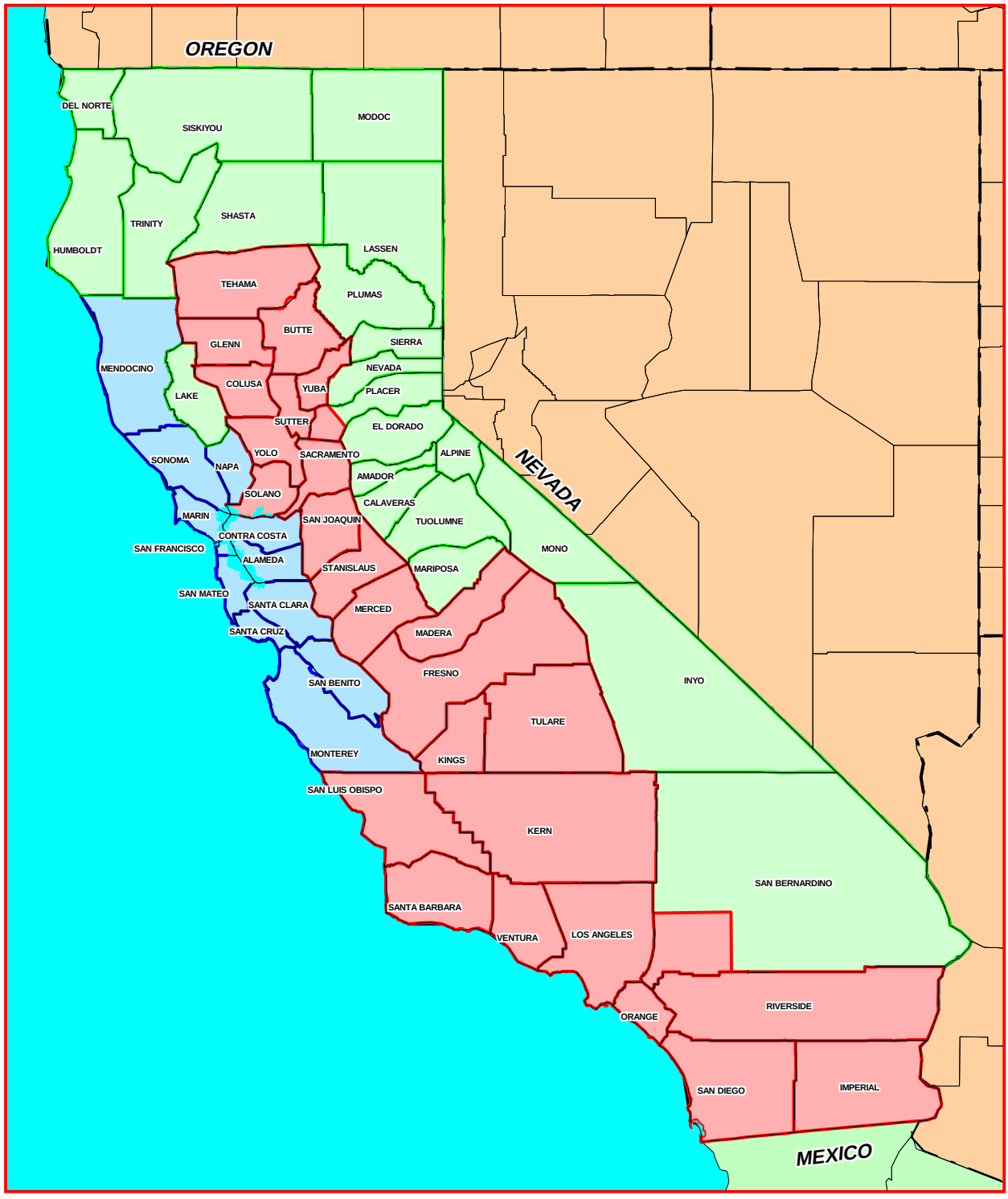
MODERATE RISK COUNTIES

Counties considered to be moderately at risk for RIFA introduction because of a cooler climate (which might slow the spread of RIFA once introduced) and a known avenue of RIFA introduction (containerized nursery stock) and large populations and/or rapid population growth should include: Monterey, San Benito, Santa Cruz, Santa Clara, Alameda, Contra Costa, Napa, Marin, Sonoma, San Francisco, San Mateo, and Mendocino.

LOW RISK COUNTIES

Counties considered to be at low risk for RIFA introduction and establishment because of cold climates and/or low human populations with less movement of nursery stock should include: Del Norte, Humboldt, Modoc, Lassen, Trinity, Shasta, Plumas, Siskiyou, Sierra, Nevada, Placer (except Central Valley portion), El Dorado, Amador, Alpine, Mono, Inyo, Calaveras, Tuolumne, Mariposa, San Bernardino (high desert portion), and Lake.

RED IMPORTED FIRE ANT
COLONIZATION RISK



HIGH RIFA RISK

MODERATE RIFA RISK

LOW RIFA RISK

CDFA

PEST DETECTION

Red Imported Fire Ant
Statewide Detection Survey

Red Imported Fire Ants (RIFA) can enter or move throughout California in or on any object containing soil or potting material, in cracks and crevices of objects, or on objects with enough soil attached to support a small colony. Flooded or saturated soil will cause RIFA to seek drier ground. Any object on a RIFA infested site is likely to be utilized by ants seeking drier habitat. Recently bee colonies have been positively associated with introductions of RIFA into almond orchards in the San Joaquin Valley. Potted plants are very high risk means of moving RIFA. RIFA has been detected entering California on other materials as well, including: roofing materials, oil pipe, hay, heavy equipment, and electrical transformers. Movement within California can likely occur in all of the above manners.

Within the RIFA infested areas of California, RIFA colonies can be found regularly at the base of trees or other objects with a southern exposure, particularly in turf areas. Colonies are not as common in densely shaded areas.

With the present level of knowledge concerning RIFA in California, risk-based detection surveys should be directed at sites throughout the State. The California Department of Food and Agriculture (CDFA) will assume responsibility for the conduct of the survey and will work cooperatively with agricultural commissioners and other county agencies to coordinate and execute the survey.

High Risk Agricultural Sites:

All orchards, particularly those that have received bees from Texas, or other RIFA infested states, in the past five to seven years. Those orchards that can be positively associated with bees from southeastern United States should be surveyed first. Any orchard newly associated with RIFA infested bees would be surveyed immediately. An annual survey would be established that surveys one quarter of the high risk acreage in the state. There are approximately 450,000 acres of identified high risk sites in 1999. Over a four year period the entire acreage would be surveyed.

Nurseries:

All nurseries, particularly those importing nursery stock from Florida or other RIFA infested states, are at risk of importing RIFA. Nurseries or brokers dealing in nursery stock from RIFA infested areas will be identified and surveyed first. However, because of the common practice of the nursery industry to exchange and/or buy stock from each other, all nurseries are high risk sites and should be surveyed within the first year.

Entryways:

- The statewide detection program must include surveys of all facilities (warehouses, mills, freight yards, etc.) receiving materials from RIFA infested areas on which ants were found and a Form 008 was issued when entering the State. The same procedure must be followed for shipments of homeowner possessions entering the State.

- Roadside rest stops and those portions of small communities adjacent to interstate highways and California state highways in the desert sections of Imperial, Riverside, San Bernardino, and San Diego Counties. This should include all areas where water is available and commercial vehicles may pull off and park for extended periods.

- Areas along railroad lines where adequate water is available in Imperial, San Diego, Riverside, San Bernardino, and Kern Counties.

Other Survey Activities:

- All calls from the public should receive immediate attention. The CDFA will work with the agricultural commissioners, local entities, and other interested stakeholders of all counties to make them aware of the risk of RIFA and establish a system to assure that RIFA related calls are investigated. All public or private agencies that may field calls about ants from the public would be made aware of a statewide toll-free hotline number. The Plant Pest Diagnostic Center will direct the flow of information and specimens from other agencies thereby alerting the CDFA of a possible RIFA infestation.

- The program will include an ongoing, statewide, biologically biased survey of non-residential sites, including golf courses, commercial areas, parks, roadside plantings, schools, churches, and similar areas. Emphasis would be placed on areas with turf, trees, and adequate sun and moisture.

- A two-mile buffer area should be surveyed around any infested site.

Red Imported Fire Ant
CEQA Compliance Assessment

SUMMARY

Due to the nature of the California Department of Food and Agriculture (CDFA) Red Imported Fire Ant (RIFA) Program, the CDFA is not required to prepare environmental documents at this time.

CDFA actions will be limited to survey and detection work, scientific evaluation and research, public education, and training of local agency personnel. These actions have no potential impact on the existing environment, and do not constitute a project within the context of the California Environmental Quality Act (CEQA). The CDFA does not anticipate using pesticides in this program, except possibly in an emergency situation as described below. It is important to recognize that CEQA may require that CDFA prepare environmental documents if the scope of the CDFA program changes in the future. This would be the case if the program were changed such that there is a potential for significant adverse impacts on the environment, which are not exempt from CEQA or have not been the subject of a previous environmental review. The remainder of this discussion relates to the use of pesticides against RIFA.

As described below, other public agencies and individuals will use pesticides against RIFA in California. The Lead Agency for approving the use of these pesticides is the California Environmental Protection Agency, Department of Pesticide Regulation (DPR). The approval of the use of pesticides by DPR is subject to CEQA, and no pesticides can be used which are not approved by DPR in compliance with CEQA.

NON-EMERGENCY USE OF PESTICIDES

This would be the use of pesticides in areas known to be infested with RIFA, where actions can be planned in advance, and immediate actions are not needed to prevent the spread of RIFA or expansion of the known infested area. The DPR is the lead agency for approving the use of pesticides in California. The DPR approval of pesticides is subject to CEQA and DPR complies with CEQA through a Certified Regulatory Program (Article 17 of the State CEQA Guidelines). To the extent that a public agency uses materials previously approved by DPR in compliance with CEQA, that public agency may rely on the previous CEQA compliance of the lead agency. Public agencies may only use materials approved by DPR in compliance with CEQA. All DPR restrictions and limitations for use must be followed. Enforcement of these restrictions and limitations is the responsibility of DPR and the county agricultural commissioners.

USE OF PESTICIDES BY THE PUBLIC

Based on information from the Science Advisory Panel, it is clear that the public will use pesticides against RIFA. Actions of individuals, which do not require discretionary decisions by a public agency, are not subject to CEQA. Pesticide label instructions and use restrictions established by DPR in compliance with CEQA must be followed. The pesticide label instructions and use restrictions established by DPR in compliance with CEQA are intended to avoid, reduce, and mitigate adverse impacts on human health and the environment.

EMERGENCY USE OF PESTICIDES

This would be limited to the use of pesticides in areas not previously known to be infested with RIFA, or in infested areas when immediate action is needed to prevent the spread of RIFA. An example of the latter might be if winged reproductive forms of RIFA are observed. In these situations, the CDFA finds that immediate action, which could include the use pesticides, are necessary to protect the environment and human health of California. These actions are exempt from CEQA under Section 15269 of the State CEQA Guidelines. In emergency actions, the CDFA will use only materials approved by DPR in compliance with CEQA, and will implement all mitigation and monitoring requirements associated with the previous DPR approval of the materials. The location, timing, and exact nature of emergency actions against RIFA cannot be known at this time.

California Environmental Protection Agency
Department of Pesticide Regulation
Environmental Monitoring and Pest Management
830 K Street
Sacramento, California 95814-5624

MONITORING GROUND APPLICATIONS OF SELECTED INSECTICIDES IN FIRE ANT TREATMENT AREAS

INTRODUCTION

The California Department of Food and Agriculture (CDFA) proposes pyriproxyfen, fenoxycarb, avermectin, and hydramethylnon for use to eradicate/control fire ant infestations in California. The Environmental Hazards Assessment Program (EHAP) of the Department of Pesticide Regulation (DPR) will provide monitoring of these treatments to provide information on the concentrations of the chemicals in air, surface, water, turf, soil, and storm water runoff. Additionally, dissipation of the insecticides for turf and soil, and their toxicity to aquatic organisms will be determined. This proposed monitoring plan follows the general models in previous studies. (Ando et al. 1993, and Segawa and Powell 1989).

This proposed monitoring plan will be followed for each application event. More than one application event may be monitored; the total number of events to be monitored will be decided when the extent of the treatment program is known. The total numbers of samples collected will be determined once this information is available.

MONITORING PLAN

Turf and surface soil will be collected from each of 15 sites in the treatment area approximately 12 hours after application to determine the maximum concentrations in treated areas. At five of the 15 sites, samples will be collected over eight additional sampling dates to determine dissipation rates of insecticides in turf and soil. Half-lives will be estimated using standard statistical methods. Chemical analyses of turf samples for dislodgeable and internal residues will be performed.

Air samples will be collected at five sites to measure ambient insecticide concentrations. The samples will be collected for a 24-hour period before application (background), during application, 24 hours post-application, and a final 24-hour sample from 24 to 48 hours after application.

Natural waterways located within the treatment area will be monitored prior to the first application and immediately following application to determine insecticide concentrations. Additionally, storm runoff sites, if accessible, will be monitored during rain runoff events to determine concentrations due to wash off from exposed surfaces. During the first rain event after the initial application, samples will be collected at points of discharge and/or at areas of concern for aquatic organisms. Water collected from each site will be analyzed for insecticide concentration and toxicity to selected sensitive aquatic species. The number and frequency of samples collected will depend on intensity and duration of the runoff event. When practical, automatic samplers will be used to collect runoff water samples.

The Department of Fish and Game (DFG) will assist in the selection of sites and species selected

for testing. The species selected will depend upon the origin of the water samples. Water quality parameters which include alkalinity, hardness, electrical conductivity, ammonia, pH, dissolved oxygen, and water temperature will also be measured.

Chemical analysis will be performed by the CDFA's Center for Analytical Chemistry. Methods are under development and quality control measures are described in Segawa (1995). DFG's Aquatic Toxicology Laboratory will perform aquatic toxicity tests on rain runoff samples and measure totals of alkalinity, hardness, and ammonia.

DATA ANALYSIS

Concentrations for dislodgeable and internal residues of insecticides in turf/thatch will be reported as milligrams per square meter (mg/m^2) and parts per million (ppm) wet weight and dry weight; soil concentrations will be reported as a ppm and mg/m^2 on a wet weight and dry weight basis. Concentrations of insecticides on air will be reported as both micrograms per cubic meter ($\mu g/m^3$) and parts per trillion (ppt), and water concentrations will be reported as both micrograms per liter ($\mu g/L$) and parts per billion (ppb). When sample size permits, means, percentiles, and frequency histograms will be presented. Toxicity data will be presented in percent survival. Water concentrations will be compared with toxicity data to aid in the interpretation of toxicity test results.

REFERENCES

Ando, C., J. Leyva, and C. Gana. 1993. Monitoring Diazinon in the Mediterranean Fruit Fly Eradication Soil Treatment Program, Los Angeles County, 1992. California-EPA/Dept. of Pesticide Regulation. Environmental Hazards Assessment Program. EH 93-01.

Segawa, R., and S.J. Powell. 1989. Monitoring the Pesticide Treatments of the Japanese Beetle Eradication Project, Sacramento County, California, 1983-1986, Volume II: Isofenphos. California Dept. of Food and Agriculture. Environmental Hazards Assessment Program. EH 89-03

Segawa, P. 1995. Chemistry Laboratory Quality Control. California-EPA/Dept. of Pesticide Regulation. Environmental Hazards Assessment Program. SOP QAQ001.00.

Red Imported Fire Ant
Research Proposals

RESEARCH

Research will be needed to develop and fine tune the methods to be used to implement this plan. The California Department of Food and Agriculture (CDFA) has consulted with scientists at UC Riverside and developed five major research areas. CDFA will continue to work with the Red Imported Fire Ant Science Advisory Panel and other research organizations to identify further research areas.

- Determine influence of California weather, hot summer temperatures, coastal fog, etc., on RIFA foraging patterns throughout the year.
- Determine factors that trigger mating flights and their success in California.
- Test attraction and efficacy of available baits to RIFA and Argentine ant under California conditions.
- Evaluate new toxicants for RIFA including fungal pathogens.
- Determine interaction of RIFA with native ants and Argentine ant.

Red Imported Fire Ant Science Advisory Panel
Comments and Recommendations

December 1-2, 1998
Orange County

The Red Imported Fire Ant (RIFA) Science Advisory Panel (SAP) met in Orange County on December 1-2, 1998. The following are the comments and recommendations of the SAP:

The RIFA SAP has had an opportunity to evaluate the RIFA infestation in the Trabuco Canyon area of Orange County. This is an apparently isolated infestation currently 16 to 20 square miles in size. Further delimitation surveys may increase the size of the Trabuco Canyon infestation. This infestation is at least three to four years old. Its origins will likely never be known, and the issue is what to do about the infestation.

This RIFA infestation will spread unless actions are taken to reduce or eliminate it. In the southeastern United States, RIFA has caused significant damage to the environment including wildlife, native ants, and electrical equipment (such as air conditioners and electrical boxes). They sting people and pets, and can render infested yards unusable by children. It is possible that the same effects will be seen in California if the infestation is allowed to spread and increase in density.

California has several options available for dealing with the Trabuco Canyon RIFA infestation.

1. **Do nothing**: The infestation will spread and the density of colonies will increase possibly causing the serious environmental and health problems seen elsewhere.

2. **Try to suppress the infestation**: Based on experiences elsewhere, suppression may slow the spread of the RIFA infestation, but will not stop it. This strategy will delay but not prevent potential damage from the RIFA.

3. **Try to eradicate the infestation**: Eradication of an infestation this size in as complex an environment as in the Trabuco Canyon area has not been done before, but based on CDFA successes against other insects including boll weevil, Japanese beetle and various fruit flies, it appears possible. If eradication is attempted, the RIFA SAP has the following comments and recommendations:

    a. The CDFA must delimit the infestation.

    b. The program will take three to five years with intensive surveys during and after treatments.

    c. The RIFA SAP will conduct an annual review of the project. If after five to seven years eradication of the Trabuco Canyon infestation has not been achieved, the effort should be stopped.

    d. The project will require the cooperation and support of all affected parties including government, elected officials, nursery industry and residents in the infested area.

e. The project will need a strong education component covering the actions to be taken by the CDFA and the actions that can be taken by residents on their own properties.

f. The CDFA must close the pathways through which RIFA enter the state.

g. The CDFA should map all RIFA colonies it finds in an attempt to determine if the infestation is monocentric or polycentric.

h. The eradication treatments will utilize conventionally formulated, registered dry baits. There will be no need for cover sprays of contact insecticides. Insecticide treatments of individual mounds will not effect eradication, but they can be used in sensitive areas or to eliminate nuisance mounds.

i. Aerial application of the bait is the most effective and efficient application technique. Ground application alone of the bait in the Trabuco Canyon infestation will reduce the probability of success.

j. The RIFA SAP evaluated non-insecticidal options for eradication the RIFA infestation. Biological control using parasitic flies or ants, and RIFA pathogens is being explored, but no natural enemies of RIFA are currently available which can reduce the ant populations below damaging levels. Some commercial pathogen formulations are available, but they lack sufficient efficacy data to be recommended for use. Cultural controls for RIFA are not effective.

k. Individual homeowners can treat colonies on their properties, but the RIFA will quickly reinvade from adjacent untreated areas. Homeowners can eliminate nuisance colonies with two to three gallons of near boiling water (about 60% effective), by using commercially available ant baits or mound treatments of insecticides following label instructions.

Red Imported Fire Ant
Science Advisory Panel

1. Dr. Walter R. Tschinkel
Department of Biological Sciences
Florida State University
Tallahassee, FL 32306-3050
(850) 644-4489
Fax: (850) 644-0481
Tschinkel@bio.fsu.edu

2. Dr. Dave A. Williams
USDA
Agricultural Research Service
1600 South West 23rd Drive
P.O. Box 14565
Gainesville, FL 32604
(352) 374-5982
Fax: (352) 374-5984
dfw@nervm.nerdc.ufl.edu

3. Dr. Homer Collins
USDA/APHIS
3505 25th Ave.
P.O. Box 2278
Gulfport, MS 39503
(228) 864-0120
Fax: (228) 864-9956
homer.L.collins@usda.gov

4. Dr. Bart Drees
Department of Entomology
Texas A&M University
College Station, TX 77843-2475
(409) 845-5878
Fax: (409) 845-7029

Red Imported Fire Ant Science Advisory Panel

Comments on Review of Draft RIFA Action Plan

On Thursday, February 25, 1999, the California Department of Food and Agriculture (CDFA) initiated a conference call to solicit the comments of the Red Imported Fire Ant Science Advisory Panel (RIFASAP) on the draft "California Action Plan For Red Imported Fire Ant". Panel members Dr. Bart Drees and Dr. Homer Collins were not available for the call. Drs'. Michael Rust, Walter Tschinkel, and Dave Williams were consulted.

Synopsis of comments:

Dr. Dave Williams:

- Dr. Williams expressed the viewpoint that the plan was very thorough, that it was well conceived, and that a community-based effort was absolutely essential to achieving the objective.
- Not using aerial application lessened the probability of achieving eradication.
- The CDFA should attempt eradication.
- The infestation probably exists as pockets of RIFA within the eradication zone.
- Felt that starting as soon as possible was desirable but understood the need to consult stakeholders and formulate a comprehensive plan.

Dr. Walter Tschinkel:

- Expressed the view that unless CDFA also adopts a statewide plan to detect and exclude the RIFA, we will simply have the problem appear elsewhere in the State. He felt that we have had at least one and possibly more introductions to form the current infestations. His opinion was based on the age and distribution of the finds.

Dr. Michael Rust:

- Expressed the view that the use of Amdro and Award as outlined in the Action Plan was not the best technique. The technique outlined was developed with the assistance of Dr. Drees, who was not available for discussion. A conference call of the SAP and Dr. Bob Dowell of CDFA is scheduled for Monday, March 1, to form a consensus opinion and furnish it to CDFA. That opinion will be included in the Action Plans recommendations.
- Dr. Rust also asked that the role of University Extension be considered.

Attachment II

CITIES CURRENTLY INVOLVED WITH RED IMPORTED FIRE ANT

ORANGE COUNTY

Anaheim
Buena Park
Costa Mesa
Cypress
Fountain Valley
Fullerton
Garden Grove
Huntington Beach
Irvine
La Palma
Laguna Beach
Laguna Niguel
Los Alamitos
Mission Viejo
Newport Beach
Orange
Placentia
Portola Hills Area
Rancho Santa Margarita Area
San Juan Capistrano
Santa Ana
Stanton
Trabuco Canyon Area
Tustin
Villa Park
Westminster

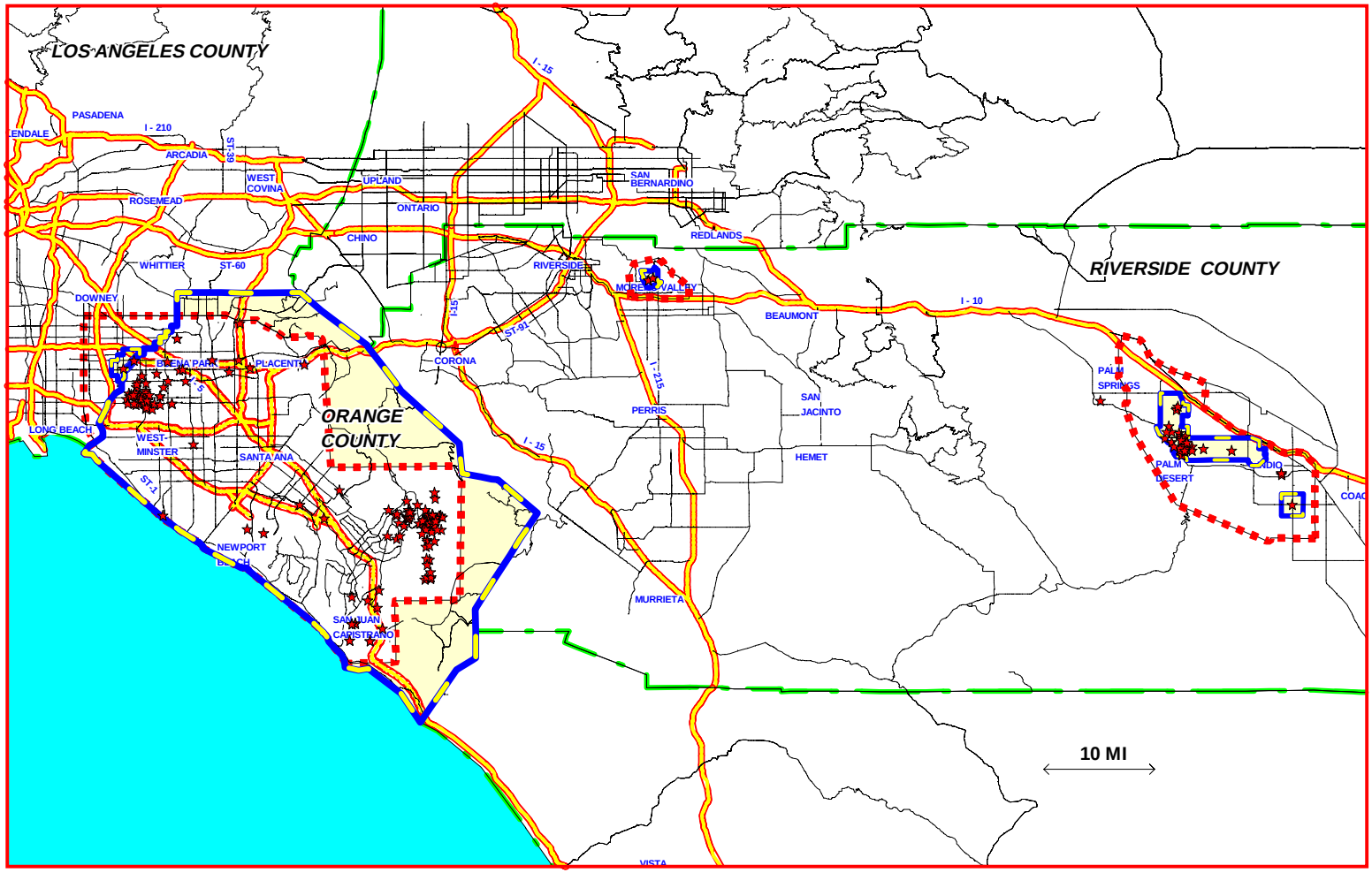
RIVERSIDE COUNTY

Bermuda Dunes Area
Indian Wells
Indio
La Quinta
Moreno Valley
Palm Desert
Palm Springs
Rancho Mirage

LOS ANGELES COUNTY

Cerritos
Hawaiian Gardens

RED IMPORTED FIRE ANT
ORANGE - RIVERSIDE COUNTIES
1998/99



CDFA

PEST DETECTION

★ RIFA SITE

KNOWN RIFA AREA

QUARANTINE BOUNDARY

03/08/99

STATE AGENCY CONTACTS

Resource Agency

- Department of Fish and Game

  Curt Taucher
  Regional Manager
  Region 6
  (562) 590-5132
  Fax: (562) 590-5172

  Kevin Hunting
  (916) 657-4436
  Fax: (916) 653-1019

  Brian Finlayson
  (916) 358-2950
  Fax: (916) 358-2953

- Department of Forestry (916) 653-7209

  Steve Jones, Manager
  Forest Pest Management Program
  (916) 653-9450
  Fax: (916) 653-8957

- Department of Parks and Recreation

  Stephen Bakken
  Park Services Division
  P.O. Box 942896
  Sacramento, CA 94296-0001
  (916) 654-9934
  Fax: (916) 657-4747

- Department of Water Resources

  Randy Brown or Leo Winternitz
  (916) 227-7531
  Fax: (916) 227-7554

CalEPA

- Department of Pesticide Regulation

  Paul Gosselin
  Assistant Director
  (916) 445-3984
  Fax: (916) 445-3980

- State Water Resources Control Board

  Walt Shannon
  Chief of Nonpoint Source Agricultural Unit
  (916) 657-1027
  Fax: (916) 657-2127

  Stan Martinson
  (916) 657-1134

Health and Welfare Agency

Department of Health Services

Dr. Rick Kreutzer and/or	Vicki Kramer
(510) 622-4500/4411	(916) 324-3738
	Fax: (916) 445-5947

Trade and Commerce Agency

- Office of Small Business
  Denise Arends, Director
  (916) 322-5790
  Fax: (916) 322-5084

- International Trade and Investment Division
  Lloyd Day, Assistant Secretary
  (916) 324-5511

Cal Trans

Larry Shields
(916) 654-4329
Fax: (916) 653-3291/3292

University of California

Dr. Joseph Morse
(909) 787-5814
Fax: (909) 787-3086

Agricultural Commissioners